## NON-AQUEOUS ELECTROLYTE AND LITHIUM SECONDARY BATTERY USING THE SAME

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## ABSTRACT OF THE DISCLOSURE

A non-aqueous electrolyte comprising (i) a nonaqueous solvent, especially mainly composed of a cyclic
carbonate and a cyclic ester and optionally a linear
carbonate, and (ii) an electrolyte salt, especially
LiBF<sub>4</sub>, dissolved therein and (iii) a vinyl sulfone
derivative having the formula (I):

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wherein R indicates a C<sub>1</sub> to C<sub>12</sub> alkyl group, C<sub>2</sub> to C<sub>12</sub>

20 alkenyl group, or C<sub>3</sub> to C<sub>6</sub> cycloalkyl, and also a lithium secondary battery using the same are disclosed.